

MEMORANDUM FOR THE RECORD

SUBJECT: 14JDA06 Unit 2 oil leak and fish salvage

On 01 May, Main Unit (MU) 2 was taken out of service (OOS) for maintenance due to leaking oil. The unit was not flushed prior to placing tail logs. Any fish in the draft tube were going to be held up to the FPP criteria of four days without salvage.

On 7 May, Project Fisheries started coordination to hold fish in the draft tube beyond four days. The tail logs were installed on Monday, 5 May and the fourth day for fish removal is 8 May.

At FPOM on 8 May, Project Fisheries reported to FPOM that the extension would not be needed because it looked like the unit would be spun to flush fish.

After FPOM on 8 May, the JDA OPM reported that the MU2 draft tube still contained oil, which impacted the Project's ability to remove fish. In order to perform fish removal, the draft tube needs to be dewatered. The water level in the draft tube is kept at a high level in order to prevent oil from entering the river (draft tube is lower than water/oil level) and to facilitate the removal of oil on the surface. In some cases, fish can be forced out of the draft tube by "spinning" the turbine blades. In this case, spinning the blades would most likely cause oil to be released into the river and will not be performed. Project personnel will continue to remove oil and monitor levels until conditions are appropriate to drain the draft tube and remove fish. The Project will do everything possible to expedite oil removal and subsequently, fish removal as soon as possible. Crew will be in daily to remove oil and to monitor conditions.

NWP notified FPOM about the emergency condition due to the presence of oil. The following information was sent to FPOM.

JDA reported that more oil (petroleum base) has been observed in the draft tube of MU 2 from a leaking Kaplan hub, estimated around 20-30 gallons in the draft tube floating on top of 30-foot water. The unit has been depressurized and the turbine is out of the water but the hub is still dripping oil and it will take two days to pump remaining oil from turbine hub until the clean-up process can begin with the expectation of additional 1-2 days to completion (estimated Monday 12 May). Fish numbers in the draft tube are not yet known. To best protect fish, JDA is exchanging approximately 25-50 gallons per minute through stop log seal leakage (draft tube drain is throttled open approximately 25%) and installed a water supply hose from MU3 scroll case drain that is providing an additional 150 gallons per minute to sustain fish until rescue can be completed.

On 12 May, JDA reported the oil is drained from the hub. Checks on 11 May indicated there is still oil in the draft tube. JDA believes they will remove the remaining oil by the end of 12 May and start draining the draft tube for fish salvage. Fish salvage duration will depend upon how many and how large the fish are. The plan is to have the fish removed by the end of the day on 13 May.

On 13 May MU2 draft tube was dewatered and fish were salvaged. The results of the salvage activity are below:

- approx. 80 to 100 catfish, various sizes, small to large - bagged and released into tailrace in excellent condition. JDA Maintenance assisted with the fish tank, which was used for transporting fish from the draft tube gallery to tailrace deck/tailrace.

- only two sturgeon, one small (1 foot) and one large, 6 feet (JD Structural assisted with an improvised lifting/stretching system; the fish was released at the boat launch by JDA Structural crew in excellent condition.)

There were only two adult lamprey morts found inside the MU 2 draft tube; they looked fairly fresh and should be attributed to the oil spill incident.

Biologists saw no evidence of oil while working inside of the MU2 draft tube. JDA Maintenance's cleanup effort over the last week was successful and the oil was thoroughly absorbed/separated from the water.

- A. Species – catfish, sturgeon, Pacific lamprey,
- B. Origin – NA
- C. Length – NA
- D. Marks and tags – NA
- E. Marks and Injuries found on carcass – two lamprey morts.
- F. Cause and Time of Death – cause is attributed to the oil spill. Time of death is not known but was likely between 5 – 13 May 2014.
- G. Future and Preventative Measures – Oil spills are dealt with on a case by case basis. This dewatering and fish salvage was conducted in a manner that reduced the likelihood of oil being released to the river while balancing the needs of fish trapped in the draft tube.

Sincerely,
JDA Project Fisheries